

REMARKS

Applicant respectfully requests reconsideration. Claims 1-47 were previously pending in this application. Claims 1, 35, and 41 have been amended.

The amendment to claim 1 is made for purposes of clarity to recite more extensively the type of polymer or oligomer involved, namely, a ladder polymer or ladder oligomer. The added recitation is consistent with the existing definition of these species in the specification, and with the definition as understood by those of ordinary skill in the art. This clarifying amendment to claim 1 therefore does not narrow claim 1 per se. Claim 35 has been amended to incorporate the recitation of original claim 36, which had depended from claim 35. Claim 36 has been cancelled. Claim 41 has been amended in a non-narrowing manner to address an antecedent issue. No new matter has been added. It is believed that these amendments clearly do not raise new issues that would preclude entry of this amendment after final action. Claims 1-35 and 37-47 remain pending with claims 1, 2, 31, and 35 being independent.

Rejection of Claim 1 under 35 U.S.C. 102(b)

Claim 1 was rejected under 35 U.S.C. §102(b) as being anticipated by *Tetrahedron Letters* 2000, Vol. 41(41) (“the 2000 Yang reference”) and *J. Am. Chem. Soc.* 1998, Vol. 120(46) (“the 1998 Yang reference”) (collectively, “the Yang references”); or, *J. Chem. Soc., Chem. Commun.* 1990 and *Liquid Crystals* 1993, Vol. 14(5), *J. Org. Chem.* 1993, Vol. 58(9) (collectively, “the Norvez references”).

The Yang references and the Norvez references fail to teach or suggest a system including a ladder polymer having a backbone that can only be severed by breaking two bonds as recited in independent claim 1. Thus, independent claim 1 is patentable over the Yang references and the Norvez references.

Accordingly, withdrawal of the rejection of this claim is respectfully requested.

If this rejection is continued, then it is respectfully requested that the Patent Office point out specifically where, in the Yang or Norvez references, each and every limitation of claim 1 can be found.

Rejection of Claims 2-34 under 35 U.S.C. 102(b) or 35 U.S.C. 103(a)

Claims 2-34 were rejected under 35 U.S.C. §102(b) as being anticipated by, or, alternatively, under 35 U.S.C. §103(a) as being obvious over the Yang references and the Norvez references.

Claims 11-14, 16, and 23-28 depend from claim 1, which is addressed above and which does not stand rejected on this ground. It is believed that these claims are patentable over the Yang and Norvez references for at least these reasons.

Of the remaining claims, claims 2 and 31 are independent.

Regarding claim 2, the 1998 Yang reference fails to teach or suggest a composition having a dielectric constant of less than 3.0, as recited in this claim. The compositions in the 1998 Yang reference have highly delocalized pi-bonds (i.e., less tightly bound pi electrons), which those of ordinary skill in the art would clearly recognize inherently result in materials with high electronic polarizability and large dielectric constants. It is recognized that materials with highly delocalized pi-bonds (i.e., less tightly bound pi electrons) tend to exhibit dielectric constants greater than 3.0. Therefore, independent claim 2 is not anticipated by the 1998 Yang references for at least this reason. Claims 3-10, 15, 17-22, and 29 depend from claim 2 and, therefore, are also not anticipated by the 1998 Yang reference.

The 2000 Yang reference and the Norvez references fail to teach or suggest a composition having a molecular weight in excess of 2000 daltons, as recited in independent claim 2. Therefore, independent claim 2 is not anticipated by the 2000 Yang reference and the Norvez references for at least this reason. Claims 3-10, 15, 17-22, and 29 depend from claim 2 and, therefore, are also not anticipated by the 2000 Yang reference and the Norvez references.

Regarding independent claim 31, the Yang references and the Norvez references also fail to teach or suggest a composition having a first component which includes a porous, shape persistent polymeric component and a second polymeric component which permeates the pores of the first polymeric component to form an interpenetrating network. Notably, the 1998 Yang reference is the only reference relied upon in this rejection that discloses a polymer, and no combination of two polymers is disclosed in that reference. Therefore, it is not seen how it would be possible for any of these references to meet the requirements of claim 31. Therefore, independent claim 31 is not anticipated by the Yang references and the Norvez references for at least this reason. Claims 32-34

depend from claim 31 and, therefore, are also not anticipated by the Yang references and the Norvez references.

Regarding the alternative rejections under 35 U.S.C. §103(a), the claimed subject matter is significantly different from the subject matter of the references relied upon. The Patent Office has presented no reasoning as to the required motivation to make any modification of the prior art that would result in compositions or devices as claimed.

Accordingly, withdrawal of the rejection of these claims is respectfully requested.

If this rejection is continued, then it is respectfully requested that the Patent Office point out specifically where, in the Yang or Norvez references, each and every limitation of claims 1, 2, or 31 can be found expressly or inherently (or claims that depend from these claims if rejection of such dependent claims is continued), or where there is a suggestion or motivation in the prior art to make any modification to any of these references, and why such modification would result in the composition or device as claimed.

Rejection of Claims 35-47 under 35 U.S.C. 103(a)

Claims 35-47 were rejected under 35 U.S.C. §103(a) as being obvious over the Yang references and the Norvez references.

These references fail to teach or suggest a device including a chromophore and a shape-persistent molecule having at least 20% free volume where the device is capable of moving the chromophore from a first orientation to a second orientation upon application to the chromophore of a source of external energy selected from the recited list. Each of these references discloses a set of molecules or polymers that, as a whole, point to consideration of the use of molecules or polymers as not orientable in use or, if orientable, then via thermal action for example in a liquid crystal environment. As such, nowhere do the Applicants see motivation or suggestion in the prior art to make any modification to the art that would result in the invention as recited in claim 35.

Therefore, claim 35 is not obvious over the cited Yang reference and Norvez references for at least this reason. Claims 37-47 depend from claim 35 and, therefore, are also not obvious over the 2000 Yang reference and the Norvez references. Claim 36 has been canceled. Accordingly, withdrawal of the rejection of these claims is respectfully requested.

If this rejection is continued, then it is respectfully requested that the Patent Office point out specifically where, in the Yang or Norvez references, each and every limitation of claim 35 can be found expressly or inherently (or claims that depend from this claim if rejection of such dependent claims is continued), or where there is a suggestion or motivation in the prior art to make any modification to any of these references, and why such modification would result in the composition or device as claimed.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

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Respectfully submitted,

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